Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

PCT Application
PCT/JP2003/00011

Applicant's or agent's file reference 3013WO0P	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/JP03/00113	International filing date (*day/month/year*) 09 January 2003 (09.01.03)	Priority date (*day/month/year*) 11 January 2002 (11.01.02)
International Patent Classification (IPC) or national classification and IPC C12N 15/12, C12P 21/02, C07K 14/47, 19/00, C12N 1/21 //(C12R1:19), (C12N1/21, C12R1:19)		
Applicant TAKEDA CHEMICAL INDUSTRIES, LTD.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 3 sheets, including this cover sheet.

   ☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of _____ sheets.

3. This report contains indications relating to the following items:

   - I ☒ Basis of the report
   - II ☐ Priority
   - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - IV ☐ Lack of unity of invention
   - V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   - VI ☐ Certain documents cited
   - VII ☐ Certain defects in the international application
   - VIII ☐ Certain observations on the international application

Date of submission of the demand 12 February 2003 (12.02.03)	Date of completion of this report 20 October 2003 (20.10.2003)
Name and mailing address of the IPEA/JP Facsimile No.	Authorized officer Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/JP03/00113

I. Basis of the report

1. With regard to the elements of the international application:*

☒ the international application as originally filed

☐ the description:

pages _____, as originally filed

pages _____, filed with the demand

pages _____, filed with the letter of _____

☐ the claims:

pages _____, as originally filed

pages _____, as amended (together with any statement under Article 19

pages _____, filed with the demand

pages _____, filed with the letter of _____

☐ the drawings:

pages _____, as originally filed

pages _____, filed with the demand

pages _____, filed with the letter of _____

☐ the sequence listing part of the description:

pages _____, as originally filed

pages _____, filed with the demand

pages _____, filed with the letter of _____

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.
These elements were available or furnished to this Authority in the following language _____ which is:

☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).

☐ the language of publication of the international application (under Rule 48.3(b)).

☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.

☒ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☒ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages _____

☐ the claims, Nos. _____

☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* *Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).*

** *Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.*

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/03/00113

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-17	YES
	Claims		NO
Inventive step (IS)	Claims		YES
	Claims	1-17	NO
Industrial applicability (IA)	Claims	1-17	YES
	Claims		NO

2. Citations and explanations

Document 1: WO, 01/44469, A1.
Document 2: EP, 499990, A2.
Document 3: WO, 00/24890, A1
Document 4: WO, 01/75104, A1.

Claims 1-17

The inventions described in claims 1-17 do not appear to involve an inventive step based on the inventions described in documents 1, 2 cited in the ISR.

Document 1 describes a process for the industrial large-scale manufacture of KiSS-1 peptide or salt thereof by subjecting a fused protein of peptide which has KiSS-1 peptide ligated to the N-end of a peptide or protein having cysteine at the N-end to a reaction of cleaving the peptide bond in the amino acid side of the cysteine residue (S cyanation reaction and then ammonolysis or hydrolysis reaction). Document 2 describes a process for the manufacture of a peptide containing no cysteine by subjecting a fused protein in which a peptide having 1-1000, preferably 3-500 amino acids containing cysteine at the N end is ligated to a peptide which has no cysteine at the N end to a reaction of cleaving the peptide bond in the amino acid side of the cysteine residue. Therefore, fusing a low-molecular peptide instead of the protein having cysteine at the N end in the invention described in document 1 apparently could have been easily conceived by a person skilled in the art.

Claims 1-17

The inventions described in claims 1-17 do not appear to involve an inventive step based on the inventions described in documents 2-4 cited in the ISR.

Document 2 describes a process for the manufacture of a peptide containing no cysteine by subjecting a fused protein in which a peptide having 1-1000, preferably 3-500 amino acids containing cysteine at the N end is ligated to a peptide which has no cysteine at the N end to a reaction of cleaving the peptide bond in the amino acid side of the cysteine residue. Manufacturing a fused protein by employing the method described in document 2 to the peptides described in documents 3, 4 and manufacturing the peptides by subjecting them to a reaction of cleaving the peptide bond in the amino acid side of the cysteine residue apparently could have been easily conceived by a person skilled in the art.